

I claim:

1. An apparatus for testing semiconductor devices to find defective semiconductor devices in which a distance between a valence band and a conduction band has a lower value as compared with that of defect-free semiconductor devices, the apparatus comprising:

a tunable light source for projecting light onto semiconductor devices;

said tunable light source being constructed to adjust the light to a specific wavelength and to a specific intensity and to project the light for a predetermined time so that when the semiconductor devices are irradiated with the light, electrons in defective ones of the semiconductor devices, in which a distance between a valence band and a conduction band has a lower value as compared with that of defect-free ones of the semiconductor devices, can be transferred into the conduction band from the valence band.

2. The apparatus according to claim 1, in combination with the semiconductor devices, wherein the semiconductor chips are wafer-level memory chips.

3. The apparatus according to claim 1, wherein said tunable light source is constructed to regulate a frequency of the projected light in a continuously variable manner.

4. The apparatus according to claim 1, comprising a wafer sampler providing a housing for said light source.

5. The apparatus according to claim 1, comprising:

a surface for positioning the semiconductor devices thereon;

a component selected from the group consisting of said tunable light source and said surface being moveably disposed to adjust a relative position between said tunable light source and said surface.

6. The apparatus according to claim 1, wherein said tunable light source includes optical fibers having ends, said ends of said optical fibers for projecting the light onto the semiconductor devices.

7. The apparatus according to claim 1, in combination with the semiconductor devices, wherein the semiconductor devices are memory chips having memory cells that have been written to.

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8. The apparatus according to claim 1, comprising a voltage supply for supplying a voltage to the semiconductor devices during testing of the semiconductor devices.

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